

REMARKS

Applicants acknowledge receipt of the office action dated August 9, 2006, in which the Examiner rejected claims 1-14 and 26-43 under 35 USC § 112, first paragraph; rejected claims 1-25 and 44-46 as unpatentable over Zajac (US 3166506) and Beretvas (US 3255109), considered separately; rejected claims 1-6, 14-17, 25-27, 29, 31, 34-35 and 40-42 as unpatentable over Farnig et al. (US 5282988); and indicated that claims 47-49 contain allowable subject matter.

Applicants have amended the claims as set out above and respectfully traverse the rejections for the following reasons.

§ 112 Rejection of claims 1-14 and 26-43

Claims 1, 26 and 34 have been amended to replace the recited “oil dispersible source of HNCO” with an isocyanate, which is fully enabled by the specification as filed. Applicants submit that this amendment removes the grounds for rejection under § 112.

§ 103 Rejection of claims 1-25 and 44-46 in view of Zajac

In rejecting claims 1-25 and 44-46 as obvious in view of Zajac, the Examiner asserts that “the intended use language ‘useful for diesel engine’ carries no weight in the claims.” Applicants respectfully submit that, in the context of the present rejection, this assertion is in error. It is well known that greases and lubricating oils are not interchangeable (See attached Exhibit A), as the former comprise a mixture of oil and thickeners that prevent the oil from flowing under low shear conditions. Thus, for example, greases are suitable for packing bearings, whereas oils are used to lubricate the moving parts of engines. (See attached Exhibit B for a helpful illustration of the role of oil in an engine). Because greases must be thick, whereas oils must be flowable, a reference that relates to thickeners for greases is not relevant to the patentability of claims to an oil.

The Zajac reference is directed to “lubricant greases and more particularly concerns a novel thickener for such greases.” (col. 1, ll. 8-9). Thus, Zajac’s teachings with respect to greases are not relevant to the present invention.

Because grease cannot not be used as an engine lubricating oil, applicant respectfully submits that the recitation in the present claims requiring that the oil be “useful for lubricating a diesel engine” connotes properties, including flowability, that distinguish the present compositions from those of Zajac.

Furthermore, Zajac uses the reaction product of an isocyanate with a boric acid. Zajac teaches that the isocyanate and the boric acid should be reacted to form a crystalline reaction product (col. 2, ll. 1-28). It is this *crystalline reaction product* that is added to an oil, not the isocyanate itself. Although Zajac does not identify the chemical structure of the reaction product, Zajac teaches that the reaction product is likely a polymer of the original isocyanate. Clearly, Zajac's teachings of the addition of a polyurethane do not suggest the invention the present claims, which recite adding an isocyanate.

Thirdly, because Zajac the reaction product is useful as a thickener for greases, one reading Zajac would be taught away from using an isocyanate for any purpose in a lubricating oil, as lubricating oils must be flowable, in clear distinction to greases.

For all of the foregoing reasons, Applicants respectfully submit that the obviousness rejection over Zajac should be withdrawn.

§ 103 Rejection of claims 1-25 and 44-46 in view of Beretvas

Like Zajac, Beretvas relates to thickeners for greases and discloses the use of a reaction product of isocyanate for that purpose. Specifically, Beretvas relates to the use of "a reaction product of a primary or secondary amine having an amino group connected to an aromatic ring, with the arylcarbonyl compound of one mole of bitolylene diisocyanate and two moles of p-aminobenzoic acid." (col. 1, ll. 40-44, emphasis added). Like Zajac, Beretvas suggests the use of a reaction scheme that yields "a polymerized diisocyanate." (col. 2, ll. 9-10).

Thus, all of the reasoning set out above with respect to Zajac also applies to Beretvas. Namely, it relates to an completely different application, namely greases instead of oils; it entails a completely different compound, namely a polymeric reaction product instead of an isocyanate; and it teaches away from the present invention by suggesting a technique that would be unsuitable for use with lubricating oils. Hence, the present claims are not rendered obvious by the teachings of Beretvas.

§ 103 Rejection of claims 1-6, 14-17, 25-27, 29, 31, 34-35 and 40-42 in view of Farnig et al.

In support of the rejection of claims 1-6, 14-17, 25-27, 29, 31, 34-35 and 40-42 as obvious in view of Farnig et al. (hereinafter "Farnig"), the Examiner states that "formula (5) in column 4 meets the limitations. . . of 'at least one oil-dispersible source of HNCO.'" While it is true that the second compound shown in formula (5) terminates with an R'-N=C=O group, it should be noted that this is merely one of several reaction products. After identifying other isocyanates that can be reacted (col. 4), Farnig states that "It is preferable for the urethane reaction products to be substantially free of isocyanate groups." Thus, post reaction to convert any isocyanate moiety to a urea or urethane group is necessary for optimum effectiveness."

(col. 4, l. 67 to col. 5, l. 2, emphasis added). Thus, Farnag expressly teaches that the isocyanate moieties be *removed* before addition of the reaction product to an oil.

Thus, in fact, Farnag *does not* teach or suggest a lubricating oil meeting the limitations of the present claims and Applicants respectfully request that the rejection over Farnag be withdrawn.

Allowable subject matter

Applicants thank the Examiner for her consideration and allowance of claims 47-49.

Conclusion

In view of the foregoing, Applicants believe that all of the claims are in condition for allowance and favorable consideration by the Examiner is requested. Should the Examiner find any impediment to the prompt allowance of the claims that can be corrected by telephone interview, the Examiner is requested to initiate such an interview with the undersigned.

Respectfully submitted,

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